The Intersection of Gender and Resuscitation Leadership Experience in Emergency Medicine Residents: A Qualitative Study

Judith A. Linden, MD, Alan H. Breaud, MPH, Jasmine Mathews, MD, Kerry K. McCabe, MD, Jeffrey I. Schneider, MD, James H. Liu, MS, Leslie E. Halpern, MD, Rebecca J. Barron, MD, MPH, Brian Clyne, MD, Jessica L. Smith, MD, Douglas F. Kauffman, PhD, Michael S. Dempsey, PhD, Tracey A. Dechert, MD, and Patricia M. Mitchell, RN

ABSTRACT

Objectives: The objective was to examine emergency medicine (EM) residents' perceptions of gender as it intersects with resuscitation team dynamics and the experience of acquiring resuscitation leadership skills.

Methods: This was an exploratory, qualitative study using grounded theory and a purposive sample of postgraduate year (PGY) 2–4 EM residents who function as resuscitation team leaders in two urban EM programs. One-on-one interviews were conducted by a single experienced researcher. Audiotaped interviews were transcribed and deidentified by two research assistants. A research team composed of a PhD educational researcher, a research nurse, an MPH research assistant, and an EM resident reviewed the transcripts and coded and analyzed data using MAXQDA v12. Themes and coding schema were discussed until consensus was reached. We used member checking to assess the accuracy of our report and to confirm that the interpretations were fair and representative.

Results: Theme saturation was reached after interviewing 16 participants: 10 males and 6 females. The three major themes related to gender that emerged included leadership style, gender inequality, and relationship building. Both male and female residents reported that a directive style was more effective when functioning in the resuscitation leadership role. Female residents more often expressed discomfort with a directive style of leadership, preferring a more communicative and collaborative style. Both female and male residents identified several challenges as disproportionately affecting female residents, including negotiating interactions with nurses more and "earning the respect" of the team members.

Conclusions: Residents acknowledged that additional challenges exist for female residents in becoming resuscitation team leaders. Increasing awareness in residency program leadership is key to affecting change to ensure all residents are trained in a similar manner, while also addressing gender-specific needs of residents where appropriate. We present suggestions for addressing these barriers and incorporating discussion of leadership styles into residency training.

From the Department of Emergency Medicine (JAL, AHB, JM, KKM, JIS, JHL, LEH, PMM) and the Department of Surgery (DFK, MSD, TAD), Boston University School of Medicine and Boston Medical Center, Boston, MA; and The Department of Emergency Medicine, Alpert Medical School of Brown University (RJB, BC, JLS), Rhode Island Hospital, Providence, RI.
Received November 16, 2017; revision received February 25, 2018; accepted March 5, 2018.
Presented at Council of Residency Directors Academic Assembly, Nashville, TN, March 2016; the Society for Academic Emergency Medicine (SAEM) New England Regional Research Forum, Worcester, MA, March 2016; Northeast Group on Educational Affairs, Providence, RI, April 2016; and the SAEM Annual Meeting, New Orleans, LA, May 2016.
This work was supported by a grant from the SAEM Emergency Medicine Foundation
The authors have no potential conflicts to disclose.
Author contributions: study conception and design—JAL, JM, AHB, DFK, MSD, and PMM; acquisition of data—JAL, JM, AHB, DFK, MSD, and PMM; analysis and interpretation of data—JAL, AHB, JM, KKM, JIS, JHL, LEH, RJB, BC, JLS, DFK, MSD, TAD, and PMM; drafting of the manuscript—JAL and PMM; critical revision—JAL, AHB, JM, KKM, JIS, JHL, LEH, RJB, BC, JLS, DFK, MSD, TAD, and PMM.
Supervising Editor: Stephen J. Cico, MD, MED.
Address for correspondence and reprints: Judith A. Linden, MD; e-mail: jlinden@bu.edu.
AEM EDUCATION AND TRAINING 2018;2:162–168

ISSN 2472-5390

doi: 10.1002/aet2.10096

Gender-based stereotypes often contribute to divergent expectations of individual leadership styles and attributes. Women are traditionally socialized to display more collaborative, communicative behaviors, while men are socialized to display more directive, authoritative behaviors.[1–3] The extent to which gender contributes to team dynamics and the acquisition of leadership skills and confidence during residency training remains unclear. Gender-based stereotypes often have a significant effect on residents as they learn to direct patient care and strive to master competency in leading resuscitation teams in the ED.[4] One prior qualitative study of internal medicine residents' views regarding the effect of gender on resident/nursing interactions reported that most female residents expressed higher levels of stress when exhibiting directive leadership styles, chose less assertive behaviors, and felt that their gender was sometimes a disadvantage in directing patient care. Residents of both genders reported that this disadvantage decreased with training experience.[4] One study of internal medicine code team leaders found that most residents identified the directive style as most effective. However, many female residents expressed discomfort and stress when displaying these behaviors in this code team scenario.[2] Streiff et al.[5] observed medical students during a standardized simulated cardiac arrest scenario and found that male students, as well as male and female students with "extraversion" behavioral characteristic, were more likely to verbalize additional leadership statements during the initial phase of a clinical scenario. They found that contextual knowledge, context experience, and other personality traits did not have significant effects.[5] Similarly, another study assessed the influence of gender on leadership in fourth-year medical students using high-fidelity simulation. This study found that female gender was associated with a lower number of "secure leadership statements" (defined as strong and direct statements, rather than statements formulated as a question).[6] Furthermore, female residents often experience the added stress of needing to negotiate relationships with nurses and "gain their trust" or to "earn" their position as resuscitation leader.[7]

Currently, 38% of emergency medicine (EM) residents and 35% of academic EM physicians are female.[8,9] There are no studies evaluating the extent to which gender influences how EM residents perceive the experience of acquiring the skills required to lead resuscitations in the emergency department (ED). Gender differences in comfort with different leadership styles have implications for training and supporting residents throughout the process of becoming competent and confident resuscitation leaders. The data presented in this article are a subanalysis of a larger data set of themes expressed in qualitative interviews with residents exploring the process of acquiring team leadership skills. We report on themes that emerged regarding EM resident's perception of gender as it relates to the acquisition of leadership skills and team dynamics.

METHODS

Study Design

This was an exploratory, qualitative study, using grounded theory to explore EM resident perceptions of leadership skills acquisition.

Study Setting and Population

This study was conducted using one-on-one confidential interviews with PGY-2 through PGY-4 EM residents from two different 4-year EM training programs located in urban, academic hospitals in the Northeast. Both medical centers are Level I trauma centers with more than 100,000 ED visits annually. These residencies were 38.8 and 45.8% female. We used a purposive sample of PGY-2 to -4 EM residents, since these residents function as resuscitation team leaders at both institutions. Interviews were conducted from April 1 to June 5, 2015. The institutional review boards at both institutions approved this protocol as exempt.

Study Protocol

A semistructured interview guide was developed and piloted among the authors and senior faculty to ensure clarity and quality of questions. The interview guide used open-ended questions and probes to further explore and clarify responses. We included questions related to the following domains in all interviews: fund of knowledge (core competency for acute resuscitation); self-perception of leadership and respect among resuscitation team members; relationship building experiences with other resuscitation team members; characteristics that may affect leadership (physical stature, gender, race, personal attributes, and psychology); and confidence (Data Supplement S1, available as supporting information in the online version of this paper, which is available at http://onlinelibrary.wiley.com/doi/10.1002/aet2.10096/full). One investigator

(PM) conducted and audiorecorded all interviews at both sites. Participation was voluntary and confidential. Verbal consent was obtained from each participant prior to the start of the interview, and they were given the opportunity to have all questions answered. Each interview lasted approximately 1 hour and each participant was given a $10 gift card for their time. Two trained ED research assistants transcribed recorded interviews verbatim into a Word document, redacting any identifying information during this process. We assigned a unique study identification number to each participant, which included a subject number, postgraduate year, and gender.

Data Analysis

We chose an initial sample size of 20 residents based on feasibility and the assumption that we would be able to achieve theme saturation with the data collected. As the interviews and analysis of data were conducted simultaneously, the four investigators coding the transcripts made the decision to stop data collection after 16 interviews had been completed as theme saturation was reached (i.e., no new themes emerged from the data)

All coding and analyses were performed using MAXQDA v12, data management and qualitative analysis software. We employed a multistep technique to confirm the reliability and validity of our data interpretation.

A team of four coders analyzed the data: a PhD educational qualitative researcher, a registered nurse researcher with qualitative experience, an MPH research assistant, and an EM resident. Audio recordings were reviewed, and each transcript was read by all coders. At least three members of the coding group were present during each coding session. All codes and themes were developed through line-by-line review of the transcripts and group discussion. Any differences of opinion were discussed until group consensus was reached.

This method was used to finalize the structure of each code. We used thematic content analysis consistent with grounded theory and the constant comparative method.[10] Each statement within the transcripts was reviewed and categorized into codes using an inductive process. Concepts and themes emerged from this in-depth analysis. The larger research group, which included EM and surgical attendings (including EM program directors at both institutions, and a surgical program director), reviewed the themes to ensure that relevance to the training environment and clinical situation was reflected. Finally, we used member checking to assess the accuracy of our report and if the interpretations were fair and representative.[11] We presented the resulting themes to members from the resident group to assess agreement with the investigators' interpretation.

RESULTS

Sixteen EM residents were interviewed for this study: 10 males and 6 females (Table 1). The median length of interviews was 48.2 minutes, with a range of 30.4 to 62.1 minutes. Multiple themes emerged. The focus of this paper is specific to themes related to gender. Three major themes involving gender emerged. Our themes and coding model can be found in Figure 1. The three circles of the Venn diagram represent the major themes identified relating to gender (leadership style, gender inequality, relationship building). The smaller font (i.e., communication, trust and respect, confidence) represents the codes within each theme. Common codes found among more than one theme are depicted in the overlapping circles.

Leadership Style

Female residents voiced discomfort with a directive or authoritative leadership style more often than male residents, and they often commented that directive or authoritative behavior in women was received differently than when their male counterparts exhibited the same behavior. Several female residents expressed that although they realized being directive is important when one is the resuscitation leader, they were not entirely comfortable in this role. Several males commented on how directive behavior in female resuscitation leaders can be received differently by nurses. Male resident responses did not include the same

Table 1
Study Participants Labeled by Postgraduate Year and Gender

Postgraduate year		
PGY2	6	(37.50)
PGY3	6	(37.50)
PGY4	4	(25.00)
Gender		
Male	10	(62.5)
Female	6	(37.5)

Data are reported as *n* (%).

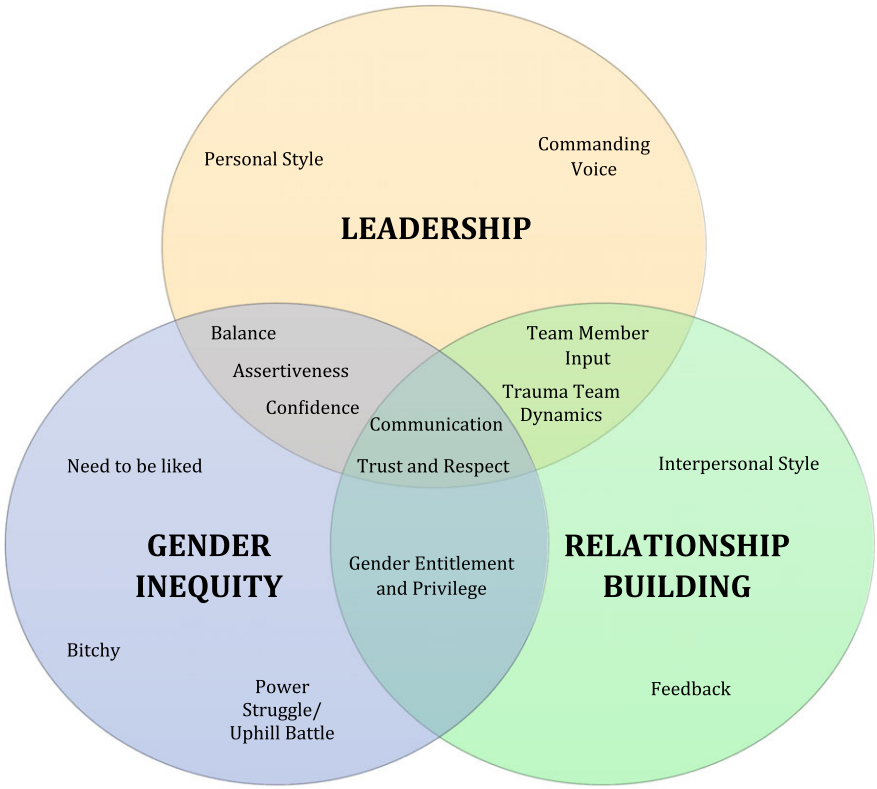

Figure 1. Venn diagram depicting the unique and overlapping codes (*lowercase lettering*) among the three major themes (*bold capital lettering*).

concerns about being authoritative. Residents of both genders reported the need to be assertive by using a loud voice, positioning oneself at the head or foot of the bed and taking command of the room. Both males and females perceived that females seem to have a more difficult time adopting this leadership style (see Table 2 for quotes).

Gender Inequity

Many participants (male and female) reported that females have a more difficult time establishing themselves as leaders and facilitating the development of collegial interactions with nursing staff. In addition, participants of both genders reported the need for female residents to use a particular approach to gain the trust and the respect of the team (see Table 2 for quotes).

Relationship Building

Both female and male residents mentioned the importance of building relationships with other team members and the important role that communication and relationships play in being an effective team leader. While residents acknowledged that using a commanding voice, being decisive, and exhibiting assertiveness were essential to being an effective leader, they also acknowledged that building trust and earning the respect of the team were critical in this role.

Both female and male participants articulated that women faced additional challenges when it came to nursing interactions. They perceived that female residents had to earn the trust and respect of the nurses more than their male counterparts. As the composition of nursing staff is often predominantly female, nurses' gender may influence these interactions.

DISCUSSION

Although the effect of gender on the acquisition of resuscitation team leadership skills has previously been reported in other specialties, this is the first study to document this phenomenon in EM residents. Our results suggest that gender has an influence on the experience of acquiring resuscitation leadership skills and that female residents perceive additional challenges in their initial experience as resuscitation leaders. Three major, interrelated gender themes emerged regarding achieving competency in leading effective resuscitations: 1) preferred leadership style, 2) perceived gender inequity, and 3) the importance of

Table 2
Representative Quotes Labeled by Gender and Postgraduate Year

Theme	Gender, PGY	Quotes
Leadership style		
	Female, PGY3	"I do think people can perceive it as being mean. Or, in females, it's just bitchy. It's not directive. It's bitchy." Interviewer: "So if you're directive as a female, it's bitchy?" "It's bitchy." Interviewer: "If you're directive as a male, it's . . .?" "It's just aggressive or a leader leading, or whatever it is. Not bitchy.
	Female, PGY3	"But . . . For the most part, I guess that would be my biggest weakness is that . . . I don't feel 100% comfortable in an authoritative role where I'm yelling out orders and putting people in their place. . . So, when I have to do that, I am worse at being a team leader."
	Female, PGY4	"I think particularly for women too; there's a tricky balance between. . . sort of being bossy and being bitchy in a way."
	Male, PGY3	"A female who is not very authoritative took an authoritative approach in her leadership style, and that did not go over well with the female nurse who was the patient's primary nurse . . . whereas if it was a male nurse or a male physician, I don't think that would've occurred."
	Male, PGY3	"To be a good team leader, you need to be assertive and loud. So people need to be able to hear you. You need to be assertive, and not wavering [in] your ideas."
Gender inequity		
	Female, PGY4	"If you're a male running the trauma, I just think that people take orders from men a little bit easier. And I think . . . As a woman in the trauma room, if you're trying to sort of order people around and tell them the things to do, you can be . . . You can be perceived as . . . In a negative way. And so, I think for me, that's been a tricky part. Growing into becoming an emergency physician and a team leader is trying to figure out how to get people to sort of do what you want them to do but still like you."
	Female, PGY4	"I think males can . . . Just kind of like bark orders or. . . give commands. Whereas I've found . . . maybe as a female, it needs to be more of a conversation like, 'I think we should get a CT head because of this. Do you agree?'"
	Male, PGY2	"I think that they [female residents] have to prove themselves a little more. Like I said, you know, a big, tall, male walks in the room with a loud voice . . . I think . . . people would default to respecting and listening to what they have to say first and questioning them second. But if a . . . woman walks in I think you have to prove yourself over time first before you get the same respect that maybe their peer would get"
Relationship building		
	Female, PGY2	"And I don't mean by being assertive and overbearing and kind of just commanding everyone but trying to just get people's respect and hopefully making suggestions and yet making everyone feel like they're part of the team so that you're not running . . . you're not like a tyrant running. It's not an autonomy; it's a democracy.' You want to make sure they feel like their opinion matters and what they're doing matters to the patient."
	Female, PGY3	"They (males) don't have to engage with the nurses as much; they're just assumed to be in control. They're assuming they're going to get the respect. Whereas I worked very hard to get the respect. I've been deliberate to try to get everyone to be on my side."

building relationships and gaining the trust and respect of other team members. Many participants acknowledged that female resuscitation team leaders face additional challenges when compared to their male colleagues.

Reflecting previous literature, many of the residents discussed the perceived importance of identifying oneself as the resuscitation leader and adapting an authoritative style.[2] Our data suggest that female residents more often voiced discomfort with an authoritative leadership style. This incongruity between the authoritative style, which is perceived as more effective in the fast–paced resuscitation setting, and the communicative style, which often feels more comfortable to many women, can create an additional tension and challenge to some female residents, as they strive to acquire effective resuscitation leadership competence. Yet the literature suggests that the most effective leadership style need not be authoritative, and that the concept of "contingent leadership," which emphasizes that effective leadership can change depending on the severity of the condition of the patient, may help address some of this tension.[12] Yun et al.[12] suggest that a directive style is often more efficient in situations with critical patients who need immediate, decisive action and when the team is more experienced, whereas a more communicative style is effective in lower-acuity patients and when the team is composed of less experienced clinicians. Mastering and adjusting leadership style to the severity of the situation may be

beneficial to both male and female residents. Program directors can address this in their curriculum through didactics and simulation.

Residents of both genders commented that female residents needed to work harder to gain the respect of the care team and had to be more careful with the tone of their voice, for example, when asking nurses or other team participants to perform a task. Our results were consistent with those of Gjerberg and Kjølsrød,[13] who found that female residents reported being met with less respect and confidence in their ability from nursing staff, compared to their male colleagues, while also receiving less assistance from the nurses. However, with time and increasing levels of experience, this gap narrowed.[13] Literature suggests that nurses expect physicians of like genders to be more sympathetic and communicative, and if this does not happen, the physicians are judged more harshly.[14,15] The fact that women reported being more comfortable using a communicative and collaborative style in the resuscitation setting actually suggests that, in this respect, female residents may be at an advantage in building trust and relationships, thus contributing to increased effectiveness and confidence with experience.

Simulation may provide an optimal environment to address and potentially decrease the effects of gender on leadership in a clinical setting.[16,17] Debriefing after simulation may allow participants to discuss nontechnical aspects of critical care, such as different leadership approaches that may initially feel foreign or uncomfortable. Furthermore, incorporating nursing staff and other team members in resuscitation simulation training affords a unique opportunity for directly observing and addressing interprofessional interactions. This may also help foster mutual respect and appreciation of abilities of the various team members of the resuscitation team.

LIMITATIONS

This exploratory study included data from two EM residencies, where both trauma and medical resuscitations in the ED are led by EM residents and may not be generalizable to other training program formats. Study participants were a convenience sample; the residents who volunteered to be interviewed may not reflect the viewpoints of all residents. Given the small sample size, we were not able to further explore the effect of postgraduate year and resident experience on their confidence in leading resuscitations, although many residents articulated views on this topic. We did not conduct interviews with nursing staff, which would allow us to compare the residents' perceptions of the effect of gender on team dynamics to the nurses' perceptions of the same. As with any qualitative study, the results may be influenced by the views of those who analyze that data. However, we had a variety of research team members with varying areas of expertise, likely minimizing this bias. The interviewer's presence and questions may have influenced the residents' answers during the interview. Finally, although female residents more commonly articulated challenges in the trauma leadership role, we are not suggesting that this applies to all female residents, nor that challenges do not exist for male residents. The gendered perceptions articulated by participants should not be interpreted as discrepancies in performance outcomes. There is no evidence that women are less skilled than men as team leaders upon completion of residency.

CONCLUSIONS

In this qualitative study, we found that emergency medicine residents perceived team relationship building as a critical component of effectively leading resuscitations, that gender has an effect on preferred leadership styles, and that female residents often faced additional barriers in the process of becoming confident team leaders. The barriers that were identified by both genders as disproportionately affecting female residents should be explicitly addressed in residency training. Emphasizing that residents should use their existing leadership strengths while actively acquiring new skills may cultivate confidence during what is often considered a very stressful aspect of resident training. Discussing different leadership styles for different resuscitation scenarios, depending on the skills and knowledge of the team and the acuity of the patient, may be helpful. Multidisciplinary simulation training might help identify and address possible gender-related barriers and provide educators with opportunities to reinforce the development of various resuscitation leadership styles.

References

1. Koenig AM, Eagly AH, Mitchell AA, Ristikari T. Are leader stereotypes masculine? A meta-analysis of three research paradigms. Psychol Bull 2011;137:616–42.

2. Kolehmainen C, Brennan M, Filut A, Isaac C, Carnes M. Afraid of being "witchy with a 'b'": a qualitative study of how gender influences residents' experiences leading cardiopulmonary resuscitation. Acad Med J Assoc Am Med Coll 2014;89:1276–81.
3. Burgess DJ, Joseph A, van Ryn M, Carnes M. Does stereotype threat affect women in academic medicine? Acad Med 2012;87:506–12.
4. Bartels C, Goetz S, Ward E, Carnes M. Internal medicine residents' perceived ability to direct patient care: impact of gender and experience. J Womens Health (Larchmt) 2008;17:1615–21.
5. Streiff S, Tschan F, Hunziker S, et al. Leadership in medical emergencies depends on gender and personality. Simul Healthc J Soc Simul Healthc 2011;6:78–83.
6. Amacher SA, Schumacher C, Legeret C, et al. Influence of gender on the performance of cardiopulmonary rescue teams: a randomized, prospective simulator study. Crit Care Med 2017;45:1184–91.
7. Wear D, Keck-McNulty C. Attitudes of female nurses and female residents toward each other: a qualitative study in one U.S. teaching hospital. Acad Med J Assoc Am Med Coll 2004;79:291–301.
8. Lautenberger D, Dandar V, Raezer C, Sloane R. The State of Women in Academic Medicine 2013–2014: The Pipeline and Pathways to Leadership. AAMC. 2014 Available from: https://members.aamc.org/eweb/upload/The%20State%20of%20Women%20in%20Academic%20Medicine%202013-2014%20FINAL.pdf. Accessed Dec 20, 2016.
9. DeFazio CR, Cloud SD, Verni CM, et al. Women in emergency medicine residency programs: an analysis of data from the Accreditation Council for Graduate Medical Education-approved residency programs. AEM Educ Train 2017;1:175–8.
10. Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. Health Serv Res 2007;42:1758–72.
11. Creswell JW. Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research, 4th ed. Boston: Pearson, 2011.
12. Yun S, Faraj S, Sims HP. Contingent leadership and effectiveness of trauma resuscitation teams. J Appl Psychol 2005;90:1288–96.
13. Gjerberg E, Kjølsrød L. The doctor–nurse relationship: how easy is it to be a female doctor co-operating with a female nurse? Soc Sci Med 2001;52:189–202.
14. Eagly AH, Karau SJ. Role congruity theory of prejudice toward female leaders. Psychol Rev 2002;109:573–98.
15. Galvin SL, Parlier AB, Martino E, Scott KR, Buys E. Gender bias in nurse evaluations of residents in obstetrics and gynecology. Obstet Gynecol 2015;126(Suppl 4):7S–12S.
16. Hunziker S, Bühlmann C, Tschan F, et al. Brief leadership instructions improve cardiopulmonary resuscitation in a high-fidelity simulation: a randomized controlled trial. Crit Care Med 2010;38:1086–91.
17. Stefan MS, Belforti RK, Langlois G, Rothberg MB. A simulation-based program to train medical residents to lead and perform advanced cardiovascular life support. Hosp Pract 1995;2011(39):63–9.

Supporting Information

The following supporting information is available in the online version of this paper available at http://onlinelibrary.wiley.com/doi/10.1002/aet2.10096/full

Data Supplement S1. Interview guide.